

Pirker and Beyond: Questions of Policy Versus Law on Unmanned Aerial Systems (UAS)

By: Sarah J. Nilsson, JD, PhD, MAS

Assistant Professor of Aviation Law, College of Aviation
Embry-Riddle Aeronautical University - Prescott

Abstract

The regulatory versus policy landscape for unmanned aerial system (UAS) users in the United States (US), as of February 2015, is not an easy one to navigate. The whole country is buzzing with the sound of this new technology, not just in terms of engine noise but more so in terms of the public outcry to the invasion of privacy. The federal government is currently drafting laws that will safely integrate these systems within the National Airspace System (NAS). Concurrently, at least 20 states, unable to wait patiently in the sidelines for such legislation, have implemented their own statutes to address these issues. Meanwhile, the judiciary has set precedent with the *Pirker* case, leaving more questions unanswered than were answered in the proceedings. Federal Aviation Administration (FAA) officials have issued guidelines and policies to bridge the gap in the law, while trying to educate many private users who are not aviators.

Keywords: Unmanned Aerial Systems, Pirker, Law, Policy, Federal Aviation Administration, Model Aircraft, Regulatory Exemption, Certificate of Waiver or Authorization, Experimental Certificates

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Introduction

In 1957, when the Russians launched Sputnik, it orbited Earth at an altitude of up to 500 miles and at a velocity of 18,000 miles per hour, circling the globe once every 96 minutes. Essentially, Sputnik passed over the United States (US) seven times each day. Nevertheless, President Dwight D. Eisenhower tacitly accepted this operation of a satellite over US territory and the violation of privacy that would be inevitable. It was established that the rules governing space flight should differ from those that govern aircraft (Kleiman, 2013). Fast forward to 2015 and as a result of these laws one can now hold a GPS in the palm of one's hand essentially harnessing the information transmitted via satellites several generations removed from Sputnik.

Contrast that 1950s attitude with today's state of flux over another technology, which deals with unmanned aerial systems (UAS), or as many incorrectly dub them, drones, and the position of the government is quite the opposite and not nearly as enlightened. The public outcry over the invasion of privacy is loud enough to be heard from space. And the lack of federal regulation has led to conflicting policies and

sometimes diametrically opposed laws from state to state. To illustrate this point, one must first familiarize oneself with the precedent created by the *Pirker* case, and next the policies, not yet laws, emanating from the Federal Aviation Administration (FAA) which have led to the creation of state laws to fill the void left by as yet unwritten federal ones.

The Pirker Case

On or about October 17, 2011, a Swiss national, Raphael Pirker, flew his Ritewing Zephyr powered glider aircraft in the vicinity of the University of Virginia, Charlottesville, Virginia for monetary compensation from Lewis Communications for video and photographs taken during that flight (*Administrator v. Pirker*, 2014a). A few months later, on April 13, 2012, the FAA advised him through a Notice of Proposed Assessment that he was to receive a civil penalty amounting to \$10,000 pursuant to 49 USC §§46301(a)(1) and (d)(2) and 46301(a)(5) (*Administrator v. Pirker*, 2014a).

The FAA alleged that Pirker was the pilot in command of the Ritewing Zephyr powered glider, or UAS as they classified it, although he did not possess a pilot certificate issued by the FAA. Furthermore, Pirker was alleged to have deliberately operated the UAS at extremely low altitudes over vehicles, buildings, people, streets, and structures. More specifically, Pirker allegedly operated the UAS at altitudes of approximately 10 feet to approximately 1,500 feet over the University of Virginia in a careless or reckless manner so as to endanger the life or property of another in violation of 14 CFR § 91.13 (FAA, 2015a). Additionally, Pirker was alleged to have operated the UAS directly towards an individual standing on the sidewalk causing the individual to take immediate and evasive maneuvers so as to avoid being struck by the UAS. Among other allegations, Pirker operated the UAS within approximately 100 feet of an active heliport at the University (*Administrator v. Pirker*, 2014a).

Upon receipt of the FAA's Notice of Proposed Assessment, Pirker retained an attorney from the firm of Kramer, Levin, Naftalis & Frankel, LLP and appealed to the National Transportation Safety Board (NTSB) Administrative Law Judge (ALJ) (*Administrator v. Pirker*, 2014a). On March 6, 2014, the opinion came down from Judge Patrick G. Geraghty, that Pirker's motion to dismiss should be granted and the Order of Assessment be dismissed. The reason was simply because his UAS was not an "aircraft" but instead a model aircraft subject only to the voluntary compliance with safety guidelines stated in Advisory Circular 91-57 (FAA, 1981). Additionally, Judge Geraghty was of the opinion that the Policy Notices 05-01 and 08-01 were issued and intended for internal guidance for FAA personnel and were not a jurisdictional basis for asserting 14 CFR § 91 enforcement authority on model aircraft operations (FAA, 2005, 2008). Neither did Policy Notice 07-01 establish a jurisdictional basis for asserting 14 CFR § 91.13 enforcement on Pirker's model aircraft operation (FAA, 2007). More importantly, out of this ruling came this statement: "Specifically, that at the time of Respondent's model aircraft operation, as alleged herein, there was no enforceable FAA rule or FAR Regulation [sic] applicable to model aircraft or for classifying model aircraft as an UAS" (*Administrator v. Pirker*, 2014a, p. 8).

Naturally, the FAA attorneys were displeased at Judge Geraghty's ruling and appealed, this time as procedure in an enforcement action dictates, to the full board of the NTSB (*Administrator v. Pirker*, 2014b). On November 18, 2014, the full board ruled that the term "aircraft" for the purposes of 14 CFR § 91.13 means "any device used for flight in the air" and therefore includes any aircraft, manned or unmanned, large or small, thereby including Pirker's Ritewing Zephyr powered glider (*Administrator v. Pirker*, 2014b). Pirker's case was thus remanded to the ALJ for a full factual hearing to determine whether he had operated his UAS in a careless or reckless manner so as to endanger the life or property of another, contrary to 14 CFR § 91.13 (*Administrator v. Pirker*, 2014b).

On January 22, 2015 Pirker announced that rather than go to trial once again, he would settle the charges with the FAA for \$1,100, which was a fraction of the original \$10,000 penalty (Aviation International News, 2015). The two-page settlement agreement signed by both Pirker's attorney and the FAA's supervisory attorney stated that Pirker did not admit to any allegation of fact or law contained in the FAA's assessment order and that he settled to avoid the expense of litigation (Aviation International News, 2015).

Current UAS FAA Policy

After Judge Geraghty, in March 2014, ruled in favor of Pirker, stating that his Ritewing Zephyr was a model aircraft, but before the full NTSB board overturned that decision in November 2014, stating that his Ritewing Zephyr was indeed a UAS, the FAA in June 2014 issued a press release that offered guidance to model aircraft operators (FAA, 2014a). In this release the FAA attempted to issue an interpretation of the 2012 Modernization and Reform Act and restated its authority to take enforcement action against hazardous operations (FAA, 2014a). When the FAA Modernization and Reform Act was signed into law in 2012, Section 333 of this Act granted authority to the FAA to establish an interim policy that bridges the gap between the current state and National Airspace System (NAS) operations as they will be once the small UAS rule is finalized. Current FAA policy is based on whether the unmanned aircraft is used as a public aircraft, civil aircraft, or as a model aircraft (FAA, 2014b).

Current UAS FAA Policy for public use

At this time the most common public use of unmanned aircraft in the US is by the Department of Defense (DoD). For example, in Iraq alone, more than 700 unmanned aircraft are in use for surveillance and weapons delivery. Additionally, Customs and Border Protection uses UAS to patrol the US/Mexican border (FAA, 2014c).

Where public use of UAS is concerned, the FAA developed guidance in a memorandum titled "Unmanned Aircraft Systems Operations in the US National Airspace System – Interim Operational Approval Guidance" which was referred to earlier in this paper as Policy Notice 05-01 (FAA, 2005). In this Policy Notice 05-01, the FAA set out guidance for public use of UAS by defining a process for evaluating applications for Certificate(s) of Waiver or Authorization (COAs) for UAS to operate in

the NAS. To address the FAA's concern for safety, not only due to interference with commercial and general aviation aircraft, but also with other airborne vehicles and persons or property on the ground (FAA, 2005).

In order to ensure safety, the operator is required to establish the UAS's airworthiness either from FAA certification, DoD airworthiness statement, or by other approved means. Applicants also have to demonstrate that a collision with another aircraft or other airspace user is extremely improbable as well as complying with appropriate cloud and terrain clearances as required. This concept is tied to the roles of pilot in command and observer and includes minimum qualifications and currency requirements (FAA, 2014c).

The role of the observer is to observe the activity of the UAS and surrounding airspace, either through line of sight on the ground or in the air by means of a chase aircraft. Generally, this means that the pilot or the observer must be, typically, within one mile laterally and 3,000 feet vertically of the UAS. Furthermore, direct communication between the pilot in command and the observer must be maintained at all times. Unmanned aircraft flight above 18,000 feet must be conducted in accordance with Instrument Flight Rules (IFR), on an IFR flight plan, must obtain air traffic control clearance, must be equipped with at least a Mode C transponder (preferably a Mode S), operating lights and/or collision avoidance lights, and maintain communication between the pilot in command and air traffic control. It is worth noting that the FAA has issued in excess of 50 COAs in the past three years (FAA, 2014c).

Current UAS FAA Policy for civil use

Under FAA policy, operators who wish to fly an unmanned aircraft for civil use must obtain an FAA airworthiness certificate. Currently, the FAA is only issuing special airworthiness certificates in the experimental category. Experimental certificates are issued with accompanying operational limitations in accordance with 14 CFR § 91.319, parts of 14 CFR §§ 21.191, 193, and 195 (FAA, 2014c). As of the beginning of February 2015, the FAA had granted 24 of these experimental certificates for the purposes of research and development, marketing surveys, or crew training (FAA, 2015b).

In September 2014, US Transportation Secretary, Anthony Foxx, announced that the FAA had granted regulatory exemptions to seven aerial photo and video production companies, and for the first time allowed the commercial use of UAS in the NAS (FAA, 2014d). It was determined that these operations did not need an FAA-issued certificate of airworthiness based on the finding they do not pose a threat to national airspace users or national security. These operators will hold pilot certificates, keep the UAS within line of sight at all times and restrict flights to the "sterile area" on the set. Additionally, the FAA required an inspection of the UAS before each flight, and prohibited operations at night. The FAA issued COAs that mandated flight rules and timely reports of any accidents or incidents. These operators also submitted UAS flight manuals with their application before receiving approval (FAA, 2014d).

In December 2014, the FAA granted five more regulatory exemptions for UAS operations to four companies to perform operations for aerial surveying, construction site monitoring, and oilrig flare stack inspections (FAA, 2014e). Similar to the first seven exemptions to the film and television industry, these operations did not need an FAA-issued certificate of airworthiness because they do not pose a threat to national airspace users or national security (FAA, 2014e).

At the beginning of February 2015, when this paper was submitted for publication, the FAA had just granted another eight more regulatory exemptions for flare stack inspections, aerial photography and surveys, and for film and television production (FAA, 2015b).

Current UAS FAA Policy for hobby or recreational use

The FAA was clear in its press release that the notice, published in the Federal Register in June 2014, was to provide clear guidance to model operators on the “do’s and don’ts of flying safely” in accordance with the Act and to answer many of the questions it has received regarding the scope and application of the rules (FAA, 2014a). In the notice, the FAA restated the law’s definition of model aircraft including requirements that they not interfere with manned aircraft, be flown within sight of the operator and be operated only for hobby or recreational purposes. The FAA also explained that model aircraft operators flying within five miles of an airport must notify the airport operator and air traffic control tower (FAA, 2014a).

The FAA reaffirmed that these provisions only apply to hobby or recreation operations and do NOT authorize the use of model aircraft for commercial operations. To this end the FAA included on its website (www.faa.gov) an informational video together with a do’s and don’ts fact sheet, intended for the public who may not be as familiar with the NAS as aviators (FAA, 2015b). Governing policy still remains that stated in Advisory Circular (AC) 91-57 (FAA, 1981). (This holds true despite the brief cancellation and subsequent reinstatement of the policy by the FAA, sometime in October 2014) (Academy of Model Aeronautics, n.d.). AC 91-57 gives guidance to persons who operate a model aircraft/UAS weighing less than 55 pounds. Among the guidance, one can find sound advice on site selection and use of good judgment. Users are to avoid noise sensitive areas such as parks, schools, hospitals, and churches. Hobbyists are advised not to fly in the vicinity of spectators until they are confident that the model aircraft has been flight tested and proven airworthy. Model aircraft should be flown below 400 feet above the surface to avoid other aircraft in flight as well as within visual line of sight (FAA, 1981).

In short, the FAA made it clear that the Agency would take enforcement action against model aircraft operators who operate their aircraft in a manner that endangers the safety of the NAS as it is their job to protect users of the airspace as well as people and property on the ground (FAA, 2014a).

State laws

In the absence of any federal laws on the matter, as of February 2015, there have been 20 States that have enacted laws directly relating to UAS beginning in 2013 and 2014, according to the National Conference of State Legislators (NCSL) (2015a, b).

Alaska requires law enforcement agencies to adopt procedures that ensure: (1) the appropriate FAA flight authorization is obtained; (2) UAS operators are trained and certified; and (3) a record of all flights is kept and there is an opportunity for community involvement in the development of the agencies' procedures. Under Alaska law, police may use UAS pursuant to a search warrant, pursuant to a judicially recognized exception to the warrant requirement, and in situations not involving a criminal investigation. Additionally, images captured with UAS may be retained by police under the law for training purposes or if it is required as part of an investigation or prosecution (NCSL, 2015b).

Florida law defines a UAS and limits its use by law enforcement. Under this legislation, law enforcement may use a UAS if they obtain a warrant, there is a terrorist threat, or "swift action" is needed to prevent loss of life or to search for a missing person. Additionally, the law enables someone harmed by an inappropriate use of UAS to pursue civil remedies and prevents evidence gathered in violation of this legislation from being admitted in any Florida court (NCSL, 2015a).

Idaho enacted a law to define UAS and require warrants for their use by law enforcement, as well as establish guidelines for their use by private citizens and provide civil penalties for damages caused by improper use (NCSL, 2015a).

Illinois enacted two laws in 2013. The first prohibits anyone from using a UAS to interfere with hunters or fishermen. The second allows UAS to be used by law enforcement with a warrant, to counter a terrorist attack, to prevent harm to life or to prevent the imminent escape of a suspect among other situations. Furthermore, if a law enforcement agency uses a UAS, the agency must destroy all information gathered by the UAS within 30 days, except that a supervisor at the law enforcement agency may retain particular information if there is reasonable suspicion it contains evidence of criminal activity. The law also requires the Illinois Criminal Justice Information Authority (CJIA) to report on its website every law enforcement agency that owns a UAS and the number they own. Each law enforcement agency is responsible for giving this information to the CJIA in Illinois (NCSL, 2015a). In 2014, Illinois enacted regulations for how law enforcement can obtain and use information gathered from a private party's use of UAS. This law requires police to follow warrant protocols to compel third parties to share information, and if the information is voluntarily given to police, authorities are required to follow the state's law governing UAS data retention and disclosure. The law also loosens regulations around law enforcement's use of UAS during a disaster or public health emergency (NCSL, 2015b).

Indiana created warrant requirements and exceptions for the police use of UAS and real-time geo-location tracking devices. The law also prohibits law enforcement from compelling individuals to reveal passwords for electronic devices without a warrant. If law enforcement in Indiana obtains information from an electronic service provider pursuant to a warrant, the provider is immune from criminal or civil liability. Furthermore, the law provides that if police seek a warrant to compel information from media entities and personnel, then those individuals must be notified and given the opportunity to be heard by the court concerning issuance of the warrant. Finally, this new law creates the crime of “Unlawful Photography and Surveillance on Private Property” thereby making it a class A misdemeanor. A person who knowingly and intentionally electronically surveys the private property of another without permission commits this crime (NCSL, 2015b).

Iowa made it illegal for a state agency to use a UAS to enforce traffic laws. This new law requires a warrant, or other lawful means, to use information obtained with UAS in a civil or criminal court proceeding (NCSL, 2015b).

Louisiana created the crime of unlawful use of a UAS. This law defines the unlawful use of a UAS as the intentional use of a UAS to conduct surveillance of a targeted facility without the owner’s prior written consent. The crime is punishable by a fine of up to \$500 and imprisonment for six months. A second offense can be punished by a fine up to \$1,000 and one-year imprisonment (NCSL, 2015b).

Montana limits when information gained from the use of UAS may be admitted as evidence in any prosecution or proceeding within the state. The information can be used when it was obtained pursuant to a search warrant, or through a judicially recognized exception to search warrants (NCSL, 2015a).

North Carolina, in 2013 placed a moratorium on UAS use by state and local personnel unless the Chief Information Officer (CIO) for the Department of Transportation approves the use. Any CIO granted exception has to be reported immediately to the Joint Legislative Oversight Committee on Information Technology and the Fiscal Research Division (NCSL, 2015a). In 2014, North Carolina enacted a bill creating regulations for the public, private and commercial use of UAS. This new law prohibits any entity from conducting UAS surveillance of a person or private property and also prohibits taking a photo of a person without their consent for the purpose of distributing it. The law creates a civil cause of action for those whose privacy is violated. Furthermore, the law authorizes different types of infrared and thermal imaging technology for certain commercial and private uses including the evaluation of crops, mapping, scientific research and forest management. Under this law, the state Division of Aviation is required to create a knowledge and skills test for operating UAS. All agents of the state who operate UAS must pass this test. The law enables law enforcement to use UAS pursuant to a warrant, to counter an act of terrorism, to oversee public gatherings, or gather information in a public space (NCSL, 2015b).

North Carolina created several new crimes. The first crime, a class H felony, is using UAS to interfere with manned aircraft. The second crime, a class E felony, is the possession of a UAS with an attached weapon. The third crime, a class 1 misdemeanor, is the unlawful fishing or hunting with UAS. The fourth crime, also a class 1 misdemeanor, is the harassment of hunters or fishermen with a UAS. The fifth crime, again a class 1 misdemeanor, is the unlawful distribution of images obtained with a UAS. The sixth crime, another class 1 misdemeanor, is operating a UAS commercially without a license (NCSL, 2015b).

North Carolina law also prohibits the launch or recovery of UAS from any state or private property without consent. Additionally, the law extends the state's current regulatory framework, administered by the CIO, for state use of UAS from July to December 31, 2015 (NCSL, 2015b).

Oregon law defines a UAS and allows a law enforcement agency to operate a UAS if it has a warrant and for enumerated exceptions including for training purposes. Oregon law also requires that a UAS operated by a public body be registered with the Oregon Department of Aviation (DOA), which shall keep a registry of UASs operated by public bodies. The law grants the DOA rulemaking authority to implement these provisions. It also creates new crimes and civil penalties for mounting weapons on UASs and interfering with or gaining unauthorized access to public UASs. Under certain conditions, an Oregon landowner can bring an action against someone flying a UAS lower than 400 feet over the property. Oregon law also requires that the DOA must report to legislative committees on the status of federal regulations and whether UASs operated by private parties should be registered in a manner similar to the requirement for other aircraft (NCSL, 2015a).

Tennessee law enacted in 2013 enables law enforcement to use UASs in compliance with a search warrant, to counter a high-risk terrorist attack, and if swift action is needed to prevent imminent danger to life. However, evidence obtained in violation of this law is not admissible in state criminal prosecutions. Furthermore, those people wronged by such evidence can seek civil remedy (NCSL, 2015a).

In 2014, Tennessee enacted two new laws. The first law makes it a class C misdemeanor for any private entity to use a UAS to conduct video surveillance of a person who is hunting or fishing without their consent. The second law makes it a class C misdemeanor for a person to use UAS to intentionally conduct surveillance of an individual or their property. It also makes it a crime to possess those images, again a class C misdemeanor. Finally, it makes it a crime to distribute or otherwise use these same images, a class B misdemeanor (NCSL, 2015b).

In all fairness, Tennessee law also identifies 18 lawful uses of UAS, including the commercial use of UAS under FAA regulation, professional or scholarly research and for use in oil pipeline and well safety (NCSL, 2015b).

Texas enacted a law that enumerates 19 lawful uses for UAS including their use in airspace designated as an FAA test site, their use in connection with a valid search

warrant, and their use in oil pipeline safety and rig protection. Texas law creates two new crimes that are classified as class C misdemeanors. The first crime is the illegal use of a UAS to capture images, and the second crime is the offense of possessing or distributing the image. It should be noted that an image in this context could be a sound wave, thermal, ultraviolet, visible light or other electromagnetic waves, odor, or other conditions existing on property or an individual located on the property. Finally, Texas law requires the Department of Public Safety to adopt rules for use of UAS by law enforcement and mandates that law enforcement agencies in communities of over 150,000 people make annual reports on their use (NCSL, 2015a).

Utah law regulates the use of UAS by state government entities. A warrant is now required for a law enforcement agency to “obtain, receive or use data” derived from the use of UAS. The law also establishes standards for when it is acceptable for an individual or other non-governmental entity to submit data to law enforcement. This new law provides standards for law enforcement agencies’ collection, use, storage, deletion and maintenance of data. If a law enforcement agency uses UAS, the measure requires that agency submit an annual report on their use to the Department of Public Safety and also to publish the report on the individual agency’s website. The new law notes that it is not intended to “prohibit or impede the public and private research, development or manufacture of unmanned aerial vehicles” (NCSL, 2015b, para. 9).

Virginia laws prohibit UAS use by any state agencies “having jurisdiction over criminal law enforcement or regulatory violations” or units of local law enforcement until July 1, 2015. Numerous exceptions exist, however, enabling officials to deploy UAS for Amber Alerts, Blue Alerts, and use by the National Guard, by higher education institutions and search and rescue operations (NCSL, 2015a).

Wisconsin law requires law enforcement to obtain a warrant before using UAS in a place where an individual has a reasonable expectation of privacy. The law also creates two new crimes. The first crime, a class H felony, is possession of a weaponized UAS. The second crime, a class A misdemeanor, is the crime of use of a UAS for a person who, with intent, observes another individual in a place where they have a reasonable expectation of privacy (NCSL, 2015b).

While on the topic of invasion of privacy it is important to mention an exception to the Fourth Amendment of the US Constitution. Typically the Fourth Amendment protects people from unreasonable searches and seizures by the government. Several exceptions do exist however, and one in particular, the open fields doctrine, should be discussed in this context (US Const. Amend. IV).

The Court in *Hester v. United States*, held that the Fourth Amendment did not protect “open fields” and as such police searches in such areas as pastures, wooded areas, open water, and vacant lots need not comply with the requirements of warrants and probable cause (*Hester v. US*, 1924). Furthermore, the Court in *Oliver v. United States* (1984) ruled that the open fields exception applies to fields that are fenced and posted. This means that an individual may not legitimately demand privacy for activities

conducted out of doors in fields, except in the area immediately surrounding the home, which is termed curtilage. Nor may an individual demand privacy for activities conducted within outbuildings and visible by trespassers peering into the buildings from just outside. Finally, it has been held that even within the curtilage and notwithstanding a ten-foot high fence around the property, there is no reasonable expectation of privacy from naked-eye inspection from fixed-wing aircraft flying in navigable airspace (*US v. Dunn*, 1987).

Test Sites

As of 2013, the FAA had selected six UAS test sites in which to allow the agency to develop research findings and operational experiences to help ensure the safe integration of UAS into the NAS together with a system featuring NextGen technologies and procedures. These are the six test sites that were selected: University of Alaska; State of Nevada; New York's Griffiss International Airport; North Dakota Department of Commerce; Texas A&M University; and Virginia Polytechnic Institute and State University (Virginia Tech) (FAA, 2013).

Data and other information related to the operation of UAS that is generated by the six test site operators will help the FAA answer key research questions such as solutions for "sense and avoid," command and control, ground control station standards, and human factors, airworthiness, lost link procedures, and the interface with the air traffic control system. This data will help the FAA to develop regulations and operational procedures for future commercial and civil use of the NAS (FAA, 2013).

Conclusion

In light of the more than 50 companies, universities, and government organizations that are developing and producing some 155 unmanned aircraft designs (FAA, 2014c), it is readily apparent that the FAA has a critical, if not daunting, task ahead of them as they formulate the laws that will govern UAS. At the time this paper was submitted for publication, the FAA, on February 15, 2015, published its Notice of Proposed Rulemaking (NPRM) proposing regulations for the commercial use of UAS weighing less than 55 pounds. The 60-day window for public comment is currently open, after which a final rule will be published, to be effective 30 days thereafter. One can only hope and trust that common sense and cool heads prevail! In the meantime, it will be interesting to watch the legal landscape in these 20 states that have enacted UAS laws as precedents are made and appeals to higher courts in the nation inevitably ensue.

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